REMARKS

This Amendment is submitted in response to the outstanding Office Action, dated November 17, 2003. The present application was filed on May 2, 2001 with claims 1-23, of which claims 1, 10, and 18-23 are independent claims. The present response proposes to amend claims 1, 6, 10, 12, 14, 15, and 18-23 and cancel claim 3. The Examiner rejected claims 10, 11, 13, and 15-17 under 35 USC §102(b) and all other claims under 35 USC §103(a).

Changes to the Specification

Applicants have amended the specification to change the term "confusions sets" to --confusion sets--, and to change the term "error correction mechanism 140" in certain paragraphs to --error correction mechanism 150-- in accordance with FIG. 1.

Independent Claims 1, 18, 20 and 22

The Examiner rejected independent claim 1 as being unpatentable under 35 USC §103(a) over Mangu et al., "Automatic Rule Acquisition for Spelling Correction," ICML (1997) (hereinafter, "Mangu (1)"), in view of Nadas et al., U.S. Patent No. 5,263,117 (hereinafter, "Nadas"). The Examiner asserted that Mangu (1) does not teach the limitation of "selecting a candidate word other than the candidate word having a highest associated score," but that Nadas does teach this limitation. The Examiner rejected claims 18, 20, and 22 under as being unpatentable under 35 USC §103(a) by Mangu (1) in view of Nadas and in further view of Roth et al., U.S. Patent No. 5,907,839 (hereinafter, "Roth"). The Examiner asserted that Roth discloses a system having a memory and a processor, and an article of manufacture.

Applicants have made clarifying amendments to independent claims 1, 18, 20, and 22. These amendments are supported, for instance, at page 4, line 20 to page 5, line 17. In particular, in these claims, Applicants have clarified that a candidate word in a confusion set corresponds to an acoustic event, that a candidate word is selected from a confusion set as a word recognized for the acoustic event, and that the selected candidate word is output as the word recognized for the acoustic event. Original claim 3, which had the limitation of "outputting the selected word" has been canceled.

Applicants read Mangu (1) as providing automatic rule acquisition for spelling correction. There is no teaching in Mangu (1) of acoustic events, as claimed in amended, independent claims 1, 18, 20, and 22.

Applicants read Nadas as providing a language model used to provide a word context match to create candidate words. The candidate words are then used in a detailed acoustic word match. See FIG. 5 of Nadas. Nadas does state the following at col. 11, lines 37-42:

> If we select the words with the first and second highest conditional probabilities, then the language model 26 will output words Y_3 and Y_4 ("management" and "consultant") as candidates for the recognition word following "travel". The candidates will then be presented to the detailed acoustic match for further examination.

Thus, in Nadas, the selected words are presented to the detailed acoustic match, which "matches the label string from acoustic processor 22 against detailed acoustic word models in store 36 and outputs a word string corresponding to the utterance." See col. 10, lines 60-63 of Nadas. There is no teaching in Nadas as to how the detailed acoustic match determines the word string corresponding to the utterance.

By contrast, a word recognized for an acoustic event, such as an utterance, in the present invention can be a candidate word other than a candidate word having a highest associated score, as indicated in amended, independent claims 1, 18, 20, and 22.

Applicants read Roth as providing an algorithm for context sensitive spelling correction. See abstract in Roth. Roth does not operate on acoustic events and does not teach or imply that a candidate word other than a candidate word having a highest associated score is selected when one or more criteria are met.

Because neither Mangu (1) nor Roth operates on acoustic events and Nadas does not teach or imply that a candidate word other than a candidate word having a highest associated score is selected when one or more criteria are met and the selected candidate word is output as a word recognized for the acoustic event, Applicants respectfully submit that independent claims 1, 18, 20, and 22 are patentable over Mangu (1), Roth, and Nadas, alone or in combination.

Dependent Claims 2 and 4-9

Dependent claims 2 and 4-9 depend from independent claim 1. The Examiner rejected dependent claims 2 and 5 under 35 USC §103(a) as being unpatentable over Mangu (1) in view of Nadas. The Examiner rejected dependent claims 4, 6, and 7 under 35 USC §103(a) as being unpatentable over Mangu (1) in view of Nadas and in further view of Mangu et al., "Finding Consensus in Speech Recognition: Word Error Minimization and Other Application of Confusion Networks," Comp. Speech and Language (Oct. 2000), hereinafter "Mangu (2)." Dependent claims 8 and 9 were rejected under 35 USC §103(a) as being unpatentable over Mangu (1) in view of Nadas and in further view of Brill, "Transformation-Based Error-Driven Learning and Natural Language Processing: A Case Study in Part of Speech Tagging," Computational Linguistics, vol. 21, 543-565 (1995).

Applicants note that neither Mangu (2) nor Brill teach or imply the limitations in independent claim 1 (and in independent claims 18, 20, and 22) of a candidate word that is selected from a confusion set as a word recognized for an acoustic event, where a candidate word other than a candidate word having a highest associated score can be selected as the word recognized for the acoustic event. Therefore, independent claim 1 (and independent claims 18, 20, and 22) is patentable over Mangu (1), Nadas, Mangu (2), and Brill, alone or in any combination.

Because independent claim 1 is patentable, dependent claims 2 and 4-9 are also patentable.

Independent Claims 10, 19, 21 and 23

The Examiner rejected independent claim 10 as being anticipated under 35 USC §102(b) by Mangu (1). The Examiner rejected independent claims 19, 21, and 23 as being unpatentable under 35 USC §103(a) over Mangu (1) in view of Roth.

Applicants have made clarifying amendments to each of independent claims 10, 19, 21, and 23. In particular, these claims now contain the limitation of "each training confusion set comprising a plurality of candidate words determined from utterances of one or more individuals." These changes are supported, *inter alia*, at page 7, lines 16-20.

Both Mangu (1) and Roth operate on words having spelling errors, and neither operates on training confusion sets having candidate words determined from utterances of one or more individuals. Consequently, Applicants respectfully submit that amended independent claims 10, 19, 21, and 23 are patentable over Mangu (1) or Roth, alone or in combination.

Dependent Claims 11-18

Dependent claims 11-18 depend from independent claim 10. The Examiner rejected dependent claim 14 under 35 USC §103(a) as being unpatentable over Mangu (1) in view of Mangu (2) and in further view of Stolcke et al., "Combining words and Speech Prosody for Automatic Topic Segmentation," Proc. DARPA Broadcast News Transcription and Understanding Workshop (1999).

Applicants note that neither Mangu (2) nor Stolcke teach or imply the limitations in independent claim 10 (and in independent claims 19, 21, and 23) of learning a plurality of corrective rules for training confusion sets, where each training confusion set comprises a plurality of candidate words determined from utterances of one or more individuals. Thus, independent claim 10 (and independent claims 19, 21, and 23) are patentable over Mangu (1), Roth, Mangu (2), and Stolcke, alone or in any combination.

Because independent claim 10 is patentable, dependent claims 11-18 are also patentable.

Additional Claim Amendments

Applicants have amended claim 6 to change "candidate" to --candidate word-- in accordance with the terminology used in independent claim 1, from which dependent claim 6 depends. An amendment was made to claim 12 to make claim 12 depend from claim 11, which has the step of "applying" referred to in claim 12. Additionally, the step of "determining a real-time confusion set" was deleted from claim 12, as this step occurs in claim 11. Further, an amendment is made to dependent claim 12 to change the term "candidate words" to --second candidate words--. This amendment was performed to avoid confusion with the term "plurality of candidate words" added by

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amendment to independent claim 10, from which dependent claim 12 depends. Similarly, amendments were made to dependent claims 14 and 15 to clarify that "at least one candidate word" is now --at least one of the plurality of candidate words-- in accordance with amended independent claim 10, from which dependent claims 14 and 15 depend.

Claim 17 was amended to have this claim depend from claim 16, which has the step of scoring referred to in claim 17.

All of the pending claims, i.e., claims 1-23, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

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Respectfully submitted,   FEB 2 3 2004

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